

CLAIMS

1. A magnetooptic read head, characterized by the fact that it comprises a magnetooptic transducer with a multilayer structure (9 to 11) with at least one thin magnetic layer with a magnetooptic effect (11), at least one layer of a nonmagnetic material (10) and having a predetermined wear coefficient greater than that of 9 and a layer with good magnetic permeability (9) for closing a magnetic circuit, and in that the layer with good magnetic permeability comprises alternating first sublayers (91, 93) made of a magnetic material with good magnetic permeability and second sublayers (92, 94) made of a material having a wear coefficient substantially equivalent to said wear coefficient of the layer made of a nonmagnetic material (10).
2. The read head as claimed in claim 1, characterized in that the first sublayers (91, 93) are made of a material similar to that of the thin magnetic layer with a magnetooptic effect (11).
3. The read head as claimed in claim 1, characterized in that the second sublayers (92, 94) are made of a material similar to that of the layer made of a nonmagnetic material (10).
4. The read head as claimed in claim 2, characterized in that the layer with a magnetooptic effect (11) is made of a material based on iron, silicon and aluminum ( $\text{Fe}_x\text{Si}_y\text{Al}_z$ ) or based on iron, tantalum and nitrogen ( $\text{Fe}_x\text{Ta}_y\text{N}_z$ ).
5. The read head as claimed in claim 3, characterized in that the layer made of a nonmagnetic material (10) is made of a material based on silicon and nitrogen ( $\text{Si}_x\text{N}_y$ ).

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6. The read head as claimed in claim 1, characterized in that the thickness of the first sublayers is less than the diameter of the particles coming from wear of the materials of the read head or of a medium to be read.

7. The read head as claimed in claim 6, characterized in that the thickness of the first sublayers is between 10 and 50 nm.

8. The read head as claimed in claim 7, characterized in that the thickness of the second sublayers is a few tens of nanometers.

9. The read head as claimed in claim 8, characterized in that it comprises a few tens of first sublayers which alternate with a few tens of second sublayers.

10. The read head as claimed in claim 1, characterized in that it comprises a reflecting layer (63) located between the nonmagnetic layer (10) and the layer of good magnetic permeability (11).

11. The read head as claimed in claim 10, characterized in that the reflecting layer is made of gold or of copper.

12. The read head as claimed in claim 1, characterized in that it comprises a layer of an optical coupling material placed against the layer with a magnetooptic effect (11).

13. The read head as claimed in claim 12, characterized in that the optical coupling layer is made of silicon.

14. The read head as claimed in claim 1, characterized in that the layer of good magnetic permeability (9) is coated with a protective layer (64) on its face which

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faces away from the layer of a nonmagnetic material (10).

15. The read head as claimed in claim 14,  
5 characterized in that the protective layer (64) is made of  $\text{Si}_x\text{N}_y$ .

16. The read head as claimed in either of claims 1 and 14, characterized in that it comprises a backplate (66)  
10 adhesively bonded to the layer of good magnetic permeability (9) or to the protective layer (64).

17. The read head as claimed in claim 16,  
15 characterized in that the layer with a magneto optic effect (11) is supported by a substrate (60), the sidewall of a stack of layers especially comprising:

- a substrate (60);
- a layer with a magnetic effect (10);
- a layer with good magnetic permeability (9);
- 20 • a backplate (66)

forms the active face of the magnetic head and in that the thicknesses of the backplate (66) and of the substrate (60) measured on said sidewall are substantially equal.

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